REMARKS

Overview

The present application includes claims 1, 5, 21-47, 49-57 and 59-62.

Specification

The Official Action objected to the amendment filed 8/28/07 under 35 U.S.C. 132(a) because it allegedly introduced new matter. The Applicant respectfully disagrees with the Official Action. As shown in Figure 1 of the application as filed, inlet 20 and outlet 22 are devoid of restrictions. Thus, the subject matter of the 8/28/07 amendment is supported by the application as originally filed. This position is supported by the Declaration of Aaron Schipper, filed herewith (see paragraph 3). Remove of the objection is respectfully requested.

Claim Objections

Claim 36 was objected to because of an erroneous identifier. Claim 36 is currently amended and is identified as "(Currently Amended)." Removal of the objection is respectfully requested.

Claim Rejections

Claims 43, 49, and 53 were rejected because the specification does not indicate the outlet is devoid of restrictions. The specification was previously amended to indicate that outlet 22 is devoid of restrictions. The support for this amendment is discussed above an in the Declaration of Aaron Schipper provided herewith (see paragraph 3). Removal of the rejection is respectfully requested.

Claims 21-26, 49, 50, 60, and 61 were rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 21 has been amended to obviate this rejection. Removal of the rejection is respectfully requested.

Prior Art Rejections

The Official Action rejected claims 21, 24, and 50 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,443,724 to Williamson (hereinafter "Williamson").

Claim 21 requires and Williamson fails to teach or suggest "upper ends of the tubes being positioned above the inlet" As shown in Figure 1 of Williamson, inlet 14 is positioned above the alleged tubes of Williamson. Removal of the rejection of claims 21, 24, and 50 is respectfully requested.

Regarding claim 50, it is unclear how the inlet 14 of Williamson has a minimum cross-sectional area of flow and the outlet 34 of Williamson has a minimum cross-sectional area of flow that is substantially equal to the minimum cross-sectional area of flow of inlet 14 as required by claim 14. Assuming inlet 14 of Williamson and outlet 34 of Williamson are cylindrical, it appears that the minimum cross-sectional flow area of inlet 14 is more than five times the minimum cross-sectional flow area of outlet 34. Removal of the rejection of claim 50 is respectfully requested.

The Official Action rejected claims 1, 27-29, 31-38, 41, 42, 48-59, and 62 under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 6,893,485 (MacDuff) in view of U.S. Patent No. 5,500,132 (Elmi) with or without additional references.

The Official Action suggests it would be obvious to combine the teachings of MacDuff, Elmi, and Muller. As suggested below, the Official Action repeatedly use hindsight to pull together bits and pieces of these references to form the suggested combination, while ignoring the fact that the references relate to much different systems and that the references themselves point away from the suggested combination. This selective picking and choosing is classic hindsight reconstruction, not obviousness.

First, MacDuff, Elmi, and Muller are significantly different systems. For example, MacDuff is designed to remove air from liquid in a hydronic system. Whereas, Elmi is designed to remove liquids (oils) from liquids (water) from a subterranean system. Unlike other mechanical arts, the fluid arts can be unpredictable. Thus, what may be beneficial in a liquid/liquid system may not be beneficial in a gas/liquid system (see also paragraph 6 of the Declaration of Aaron Schipper). Rather than recognize the unpredictable nature of combining

components of liquid/liquid systems with gas/liquid systems, the Official Actions moves forward with hindsight combinations of multiple references.

Next, it appears that MacDuff is intended for a hydronic system (see paragraph 4 of the Declaration of Aaron Schipper) in which the fluid is cycled over the device of MacDuff multiple times giving a single tube multiple chances to collect air, whereas the device of Elmi appears to be a single pass system (see paragraph 5 of the Declaration of Aaron Schipper), which requires multiple tubes to collect as much liquid in the signal pass. Thus, the suggested motivation to use the multiple tubes of Elmi in a single pass system is unnecessary in the multiple pass system of MacDuff.

Additionally, MacDuff already appears to provide the ability for "lighter material" to contact subsequent wires. For example, as shown in Figure 1 of MacDuff, element 17 includes multiple wrapped layers. Any material not contacted by the first layer of element 17 will have the ability to be contacted by a downstream layer of element 17. Thus, the suggested benefit of modifying MacDuff in view of Elmi is already provided in MacDuff without the proposed modification. Thus, the proposed modification provides no additional benefit. This is yet another example of the Official Action using hindsight. It this particular instance, the Office Action ignores the teachings of even the base reference.

Further, the Official Action appears to be selective in picking and choosing the elements of Elmi to combine with MacDuff. For example, Elmi suggests the use of perforated tubes, which increases the surface area to maximize the efficiency (see Column 5, lines 5-7). Rather than carryover this teaching of Elmi to MacDuff, the Official Action ignores this benefit and continues to use the wire tube of MacDuff in the combination, which will have less surface area and be less efficient as suggested by Elmi. Thus, the proposed combination conveniently uses one alleged teaching of Elmi, while conveniently ignoring a stated beneficial teaching.

Another example of selective picking and choosing among references comes to light in the rejection of claim 34, which is also inconsistencies within the rejection of base claim 31. The Official Action relies on Elmi to show a plurality of tubes and suggest the benefit of downstream tubes. As admitted by the Official Action, Elmi does not teach the tubes arranged in a substantially circular pattern. As shown in Figure 2 of Elmi, the tubes are arranged in rows such that liquid may pass through multiple downstream tubes. The rejection of claim 34 ignores

this downstream arrangement of the proposed combination and the alleged benefit of further downstream filtering. Rather, the Official Action suggests arranging the plurality of tubes in a circular pattern, which will result in several of the tubes having fewer or no upstream or downstream tubes than if arranged in the rows of Elmi. Thus, to make the rejection of base claim 31, the Official Action suggests a motivation for providing downstream tubes to MacDuff in one breath and then provides a combination that results in few or no downstream tubes in another breadth. Rather than adopt the full alleged teaching of Elmi, the Official Action elects to use hindsight to pick and chose from the alleged teachings from Elmi resulting in a rejection that is inconsistent with the motivation of the base rejection of claim 31.

Within the same rejection discussed above, the Official Action looks to a fundamentally different system of filtration (particulate screening from a liquid in Muller) for particular claimed features to modifying another filtration system (air removal from a liquid in MacDuff), which has already been modified with yet another filtration system (liquid removal from a liquid in Elmi). Muller relates to a filter system that suffers from solids that cake on a cloth filter (see the abstract). As shown in Figure 1 of Muller, filter cloth 2 is positioned over *elastic* tubes 1 to collect materials that cakes over cloth 2 and must be cleaned from cloth 2 by radial pulsating action through central tube 5. The only purpose of elastic tubes 1 and central tube 5 appears to be as a support of filter cloth 2 and to provide pulsation rather than providing any coalescing function. Rhetorically, the Applicant must ask why the Official Action turns to a caking filter system that uses elastic tubes 1 that support a filter cloth 2 when looking to modify the fundamentally different coalescing system of MacDuff. The apparent answer is hindsight reconstruction using the teachings of the present application. Why else would one turn to the system of Muller that has admitted caking issues and requires filter cloth 2? Clearly the Official Action is not suggesting providing filter cloth 2 of Muller to MacDuff because such a combination would clog MacDuff. If MacDuff is not provided with the filter cloth 2, there is no reason to provide the support and cleaning structure of Muller to MacDuff.

This haphazard selection of different components of these much different systems (MacDuff, Elmi, and Muller) to formulate the claimed invention is one of many indications that the Official Action is relying on the teachings of the present application rather than the references themselves to form the rejections.

The Official Action rejects claims 36-42, 53-57, and 59 as being unpatentable over MacDuff, in view of Elmi, and Schwartz (U.S. Patent No. 5,676,740) with or without additional references. In the rejection of claim 36, the Official Action states that the diffuser 40 of Schwartz is structurally equivalent to the claimed wire mesh retaining wall. As supported by the Declaration of Aaron Schipper (see paragraph 8), the Applicant respectfully disagrees. The object of the claimed wire mesh retaining wall is to limit flow restriction, whereas the object of the diffuser 40 of Schwartz is to diffuse and distribute liquid, each of which requires flow restriction to direct the fluid. This is accomplished by limiting the size and number of holes in diffuser 40. Whereas the claimed wire mesh tube inherently attempts to maximize the size and number of holes. Further, it is unclear whether such a diffuser would provide any benefit to the claimed plurality of wire mesh tubes in the proposed combination. It appear such a diffuser would limit the flow of liquid to the inner portion of the cylinder limiting the alleged downstream benefit of multiple tubes. Thus, the result of providing diffuser 40 appears to cut against the suggested motivation for provide multiple tubes. Once again, the Official Action provides a combination based on inconsistent motivations for making the combination.

In the rejection of claims 21-23, 49, and 50 over MacDuff in view of Elmi and Kuster (U.S. Patent No. 5,490,874) or Mannion (U.S. Patent No. 3,668,822), the Official Action states that the claim recites a change in dimension. No where does claim 21 recite a dimension. Rather, claim 21 recites relative positions of various portions of the wire mesh tubes. Further, the placement of these portions will effect the performance of MacDuff because it will change the amount of element 17 directly in the flow path. Further, this rejection of claim 21 relies on a combination of either Kuster or Mannion, but fails to provide any reason whatsoever to modify MacDuff to have any feature of Kuster or Mannion. This failure is yet another example of the use of hindsight, rather than prior art, to formulate a reason to reject the claims.

The selection of Mannion as the basis of the rejection is still further evidence of this use of hindsight. As with Muller, Mannion is a particle screening system. Screen 37 of Mannion is designed to capture particles before they can clog orifice 35. Without the use of hindsight, one of ordinary skill in the art (discussed below) would not look to such a screen 37 for use in the fundamentally different system of MacDuff.

The rejection of claim 5 is incomplete. The Official Action states that plate 16 includes a plurality of recesses "(formed by member (94))" of U.S. Patent No. 4,051,033 (Blace). Blace describes 94 as a cross wire. It is unclear how a cross wire can define a plurality of recesses in plate 16. Thus, the Official Action has failed to provide support for this rejection.

Further, this rejection is one of several examples in which the Official Action relies on up to four prior art references. While patching together these (and the other references), the Official Action has ignored all indicators pointing away from the suggested combination. For example, like Muller and Mannion, Blace is a screen filtering system that captures particles. See bags 10 that are used to screen the particles. Once again, the Official Action reaches far and wide to a different type of filtering system in an unsuccessful attempt to formulate a combination to support a rejection. Not only does the Official Action use components from four different systems to formulate the combination, it fails to show each limitation of the claim as discussed above.

In another example of a four-way (potentially five-way) combination, claim 30 was rejected over MacDuff, in view of Elmi, in view of Muller, and in view of U.S. Patent No. 4,985,182 (Basse)(and possibly "Wheeler (913)")[1]. In perhaps the most extreme case of hindsight reconstruction, the Official Action suggest that the three-way combination of MacDuff, Elmi, and Muller should be modified with the teachings of the "Packing Element" of Basse that bears no apparent functional relationship to the other combined filtering systems. Rather, the packing element is configured to promote the transfer of substances between gas streams and liquid streams (see Background of the Invention). The Official Action first states that guide surfaces 16 define flow paths (for sludge) and then suggests that these guide surfaces (which are preferably extruded) can be made of wire mesh because it would be an "obvious structural equivalent." No basis for this alleged structural equivalence is provided. Further, it is difficult, if not impossible, to understand how a plastic extrusion is structurally equivalent to wire mesh. It is even more difficult to understand how wire mesh can possibly define a flow path as it will allow materials to pass through, not defining a flow path. Once again, the Official Action selects bits and piece of an unrelated reference to formulate a rejection. Further, the Official Action is again inconsistent. First, the Official Action suggests providing feature of Basse to provide a

[1] A similar reference to Wheeler (913) was made in the 3/29/07 Official Action.

flow paths. Then the Official Action further modifies the Basse by providing wire mesh to destroy the alleged flow paths.

In addition to the impermissible use of hindsight to form the rejections, the Official Action fails to show how each and every limitation of the claims is taught by the proposed combination. For example, the Official Action states that the alleged elongated core element 5 of Muller has a rigidity greater than the wire mesh tubes referred to in claims 1 and 31. However, the Official Action provides no support in Muller for this conclusion. Thus, the Applicant must assume that the Official Action is either once again impermissibly relying on hindsight or impermissibly speculating as the rigidity of tube 5 of Muller.

As another example, the Official Action suggests that Elmi teaches a coupling element "(the cubic frame)" and then suggests that a band is wrapped around the coupling element (i.e. the cubic frame) in reference to claim 29. However, in Figure 2 of Elmi, no such band is shown wrapped around the cubic frame.

In yet another example, the Official Action states that the upper part of 40 of MacDuff satisfies the claimed "end cap" of claim 32. The upper part of 40 is not a cap. Further, the Applicant suggests that an elongated core received in upper part 40 would interfere with float 22 and reduce or destroy the functionality of MacDuff.

In yet another example, the Official Action fails to show how the proposed combination teaches all the limitations of claim 62. Specifically, the Official action fails to address the centering requirement of claim 62.

Further still, the rejection of claim 34 fails to show how the proposed combination of MacDuff and Elmi results in a circular pattern. Rather, the proposed rejection merely suggests placing multiple tubes in the circular shell of MacDuff, but provides not basis for arranging them in a circular pattern.

For the Official Action to establish a prima facie case of obviousness, it must follow the guidelines set forth by the Supreme Court in *Graham v. John Deere* that is required "in each and every case." See MPEP §2141. These guidelines include 1) determining the scope and contents of the prior art; 2) ascertaining the differences between the prior art and the claim in issue: 3) resolving the level of ordinary skill in the art; and 4) evaluating evidence of secondary considerations. The Official Action fails to fully address at least items 3 and 4. Because of this

failure to consider each of the *Graham* factors, the Official Action does not establish obviousness.

When asked about the level of ordinary skill in the art, the Examiner suggested that it was "low." The Examiner suggested this level of ordinary skill because of the simple construction of the claimed device, namely wire mesh tubes. Because of such a low level of skill, one of ordinary skill in the art would not look to an oil/water system, such as Elmi, for motivations to benefit an air/liquid system, such as MacDuff. Even if one of such low skill in the art were to look to such a different system, one of such low skill in the art would not be able to predict if coalescing function of a liquid/liquid system would carryover to a gas/liquid system (see paragraph 6 of the Declaration of Aaron Schipper).

Further if one of such low ordinary skill in the art were to look to another teaching, the person of low skill in the art would surely adopted the express suggestions of the teaching rather than turning away from such teaching. For example, as stated above, Elmi teaches the use of perforated tube, which having greater surface area than the claimed wire mesh tubes. As mentioned above, Elmi suggests that increased surface area increase efficiency. Thus, when looking to Elmi for motivations to modify MacDuff, one of such low skill would replace the wire of MacDuff with a perforated tube. Rather the Official Action demonstrates an uncanny ability to weave in and out of the references to make the rejections. Such uncanny ability is only provided by hindsight.

Further, because of such a low ordinary skill, one of ordinary skill in the art would not look to a cloth particulate screening system, such as Muller, for motivations to benefit an air/liquid system, such as MacDuff. As suggested above, one of such skill in the art would not look to provide cloth filter 2 of Muller to MacDuff because it is fundamentally different system and it would clog MacDuff. As such, one of such low skill in the art would also not look to provide the support and pulsation structure of Muller (tubes 1 and 5) to MacDuff.

Furthermore, the Official Action fails to fully consider or address the negative consequences of some of the proposed combinations. For example, providing MacDuff with a plurality of tubes rather than the single disclosed element will increase the expense of MacDuff with little, if any, predictable increase in functionality of MacDuff. As stated above, MacDuff appears to be a multi-pass system. Because the liquid of MacDuff will pass over element 17

multiple times, additional elements 17 as suggested by the rejection, will not predictably increase the ultimate air removal provided by element 17. Further, as stated above, MacDuff already provides a structure for allowing further downstream contact. Thus, the suggested combination adds expense to MacDuff without adding any predictable improvement of the ultimate functionality.

Yet another negative consequence of the proposed combination is that the functionality of MacDuff would be significantly reduced or destroyed. If the "elongated core" of Muller is provided on the device of MacDuff, it will interfere with float 22. Such interference will limit or disable the ability of MacDuff to vent. Such an inability to vent, will limit the functionality of MacDuff. Even with such negative results, the Official Action continues with such hindsight combinations.

As stated in the Declaration of Aaron Schipper (see paragraph 7), the device described in the present application provided several unexpected positive results. These include unexpected abilities to remove small particles (i.e. 5 microns or less) and the abilities to remove light particles (i.e. those that are less dense than the liquid in which they are carried). Consideration of these unexpected results is respectfully requested.

As stated throughout, the Official Action has fallen into the trap of using hindsight to formulate most, if not all, of the rejections. The rejections pick and chose features from various applied references without much, if any regard, for the logic or negative consequences of the proposed combinations.

For at least this reasons, Applicant submits that independent claims 1, 21, 31, and 36 are in condition for allowance. Such action is respectfully requested. Claims 5, 22-30, and 32-47, 49-57, and 59-62 depend from these independent claims and are believed to be in condition for allowance for at least the reasons given above and for the further limitations of claims. Such action is respectfully requested. Claims 3, 4, and 58 have been cancelled.

Final Remarks

Claims 1, 5 and 21-47, 49-57, and 59-62 are believed to be in condition for allowance. Such allowance is respectfully requested.

If necessary, please consider this a Petition for Extension of Time to effect a timely response. Please charge any additional fees or credits to the account of Baker & Daniels Deposit Account No. 02-0390.

In the event that there are any questions related to these amendments or to the application in general, the undersigned would appreciate the opportunity to address those questions directly in a telephone interview to expedite the prosecution of this application for all concerned.

Respectfully submitted,

s/Norman J. Hedges/
Norman J. Hedges, Reg. No. 44,151
BAKER & DANIELS LLP
300 North Meridian Street, Suite 2700
Indianapolis, Indiana 46204
Telephone: (317) 237-8691
Facsimile: (317) 237-1000